

ABSTRACT OF THE DISCLOSURE

An aqueous composition for chemical mechanical planarization of a wafer or film using a fixed polishing pad, includes:

5 (a) from about 0.2 to about 10 weight % of abrasive nanoparticles having an average particle size of between about 10 and about 200 nanometers; and

(b) from about 90 to about 99.8 weight % of water;

wherein the pH of the composition is between about 3 and about 5 or between about 9 and about 12, and the composition does not comprise
10 polyelectrolytes. Also included is a one step process for chemical mechanical planarization of topographical structures of oxide filled wafers or films using a fixed polishing pad and an abrasive composition.